

WARE ZONING BYLAWS –Solar Energy Facilities
Draft August 13, 2019

Solar Energy Facilities

A. Purpose. The purpose of this bylaw is to ~~promote~~ regulate the development of solar energy facilities by providing standards for the placement, design, construction, operation, monitoring, modification, and removal of such installations, to protect public safety, to minimize impacts on scenic, natural and historic resources of Ware, and to provide adequate financial assurance for the eventual decommissioning of such installations. This purpose is to:

1. facilitate the permanent protection of open space, agricultural land, forested land and mature forest;
2. facilitate the permanent protection of natural, historic, and scenic resources;
3. protect endangered or threatened species, wildlife corridors and habitat;
4. take into consideration sensitive and noteworthy natural, scenic, historic and cultural resources;
5. identify and protect physical features: streams, wetlands, steep slopes, land forms, cultural assets, and agricultural resources;

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A-B. Applicability. This §4.8.3 applies to all large ground-mounted solar energy facilities and to physical modifications that materially alter the type, configuration, or size of these facilities or related equipment. Solar facilities for the primary purpose of agriculture are exempt from this §4.8.3 pursuant to MGL c. 40A §3. Solar facilities for one and two family dwellings are also exempt from this §4.8.3.

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B-C. General Requirements

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1. Permit Required. Large ground-mounted solar energy facilities are permitted by-right upon approval of a Site Plan in the Highway Commercial (HC), the Commercial Industrial (CI), and the Industrial (I) districts, and upon the granting of a Special Permit and Site Plan Approval in the Residential Business (RB) and the Rural (RQ and RR) districts. Ground-mounted solar energy facilities are not permitted in the Beaver Lake Residential (BLR), Suburban Residential (SR), Downtown (DTR and DTC), or the Mill Yard (MY) districts, given the density of development in these areas.
2. Review Fees. The Planning & Community Development may, in accordance with MGL c. 44 §53G, impose a Project Review Fee to hire outside consultants ~~with expertise in solar installations~~ to review the proposed project. This fee shall be estimated at the time of application and a deposit of at least 75% of that estimate collected prior to the public hearing, with the balance due upon receipt of the final invoice from the review consultant. This fee shall be deposited into a separate account in compliance with MGL c. 44 §53G, and any balance (including interest) remaining when the project is completed shall be returned to the applicant.
3. Required Documents. In addition to the submission requirements in §7.4, Site Plan Review, the applicant shall provide the following documents:
 - a) Plans and drawings of the solar energy facility signed and stamped by a Professional Engineer licensed to practice in Massachusetts, and in good standing, showing the proposed layout of the system

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- b) Existing conditions showing property lines and physical features, including but not limited to: wetlands and related buffer zones, rivers and associated riverfront areas, vernal pools, flood zones, ledge, outcropping, logging or access roads, forested areas, stone walls and stone foundations or other historic features, and roads for the project site
- c) Locations of local or National Historic Districts
- e) d) Locations of Priority Habitat Areas and Bio Map 2 Critical Natural Landscape Core Habitat mapped by Natural Heritage & Endangered Special Program (NHESP)
- e) Proposed changes to the site including: grading, slope, vegetation clearing and planting, exterior lighting, boundaries of vegetative buffer, zoning setback lines, screening vegetation or structures
- e) f) Landscape plan identifying location, size and species of buffer plantings
- e) g) Proposed surveyed layout of the system/facility and related structures, including final stormwater and other site management devices, fences, emergency management turnarounds and staging areas, and access road(s)
- e) h) Diagrams of sight lines from abutting residential and commercial structures and public ways, and visualizations of view of the site from which the facility would be visible
- e) i) Construction stormwater management and erosion control
- e) j) Post-installation stormwater management
- e) k) Construction Phases with detailed notes on plan including material lay down and staging areas
- e) l) One- or three- line electrical diagram detailing the solar installation, associated components, and electrical interconnection methods, with all National Electrical Code compliant disconnects and overcurrent devices-
- e) m) Technical specifications of the major system components, including the solar arrays, mounting system, ~~and~~ inverter and any on-site battery storage
- e) n) Evidence that the utility company has been notified of the intent to install a solar energy facility and that the utility company has responded in writing to the notice. Off-grid systems are exempt from this requirement
- e) o) Evidence the solar PV modules shall be positioned in such a way that there is minimal or no level of glare on a residence of public way at any time during the day
- e) p) The name, address, and contact information of the proposed installer, operator, and owner of the solar energy facility
- e) q) Documentation of actual or proposed control of access ways and the project site sufficient to allow for installation and use of the proposed facility

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Ⓢ) An Operation and Maintenance Plan which shall include measures for maintaining safe access, storm water controls, and general procedures for operating and maintaining the installation

Ⓣ) Proof of liability insurance-

Ⓤ) Financial surety that satisfies §4.8.3 H 5 of this Bylaw

Ⓡ) A comprehensive decommissioning/removal plan

v) Results of baseline water testing performed on all abutting properties wells and/or open water bodies (ponds, streams, etc). Testing for heavy metals, carcinogens, lead, mercury, and any element contained within the panels including, but not limited to any chemicals found in the installed solar panels. (from Warren proposed bylaw)

Any portion of these requirements may be waived upon written request submitted to the Planning & Community Development Department. Waiver will be granted if in the opinion of the Planning Board the materials submitted are sufficient for the Board to made a decision.

4. Modifications. All major modifications to the site plan that are proposed after issuance of the building permit require approval of the Planning & Community Development for a modified site plan. Depending on the extent of changes the modification may need Planning Board approval.

5. Dimensional Requirements
 - a) Setbacks. Large ground-mounted solar energy facilities and all accessory structures shall have a setback from front, side and rear property lines and public ways of at least one-hundred (100') feet.
 - b) Buffer. The site plan shall provide a buffer of fifty feet (50') one-hundred (100') feet between the solar array and all properties in residential use, including houses across a street. This buffer shall be of undisturbed natural vegetation, or if existing vegetation is inadequate as determined by the Planning & Community Development to provide a visual screen, then new landscaping with or without an earthen berm shall be designed and installed to provide the screening. If the applicant provides information showing that the visual buffer would have a detrimental impact on the ability to generate power, the Planning Board may grant a waiver to reduce the size of the buffer, but shall not eliminate it. Consideration should be given to designing buffers in situations where topography may negate the effectiveness of the buffer; the intent is to provide visual screening from existing residences to the array, and as such the location of the buffer can be modified to provide a more effective screen.

6. Accessory Structures. All accessory structures including but not limited to equipment shelters, storage facilities, transformers, batteries and substations shall be subject to reasonable conditions by the Planning Board concerning

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bulk and height, parking, building coverage, and vegetative screening to avoid adverse impacts on the neighborhood or abutting properties.

D. Design Standards

1. ~~1.~~ Lighting

- a) Lighting shall be limited to that required for safety and operational purposes, and shall not be intrusive in any way on abutting properties.
- ~~a)b)~~ Lighting shall incorporate full cut-off fixtures to reduce light pollution.

2. Signage

- a) The facility shall have one sign not to exceed 32 square feet which identifies the operator and provides a 24-hour emergency contact phone number.
- b) The site may have a secondary sign not to exceed 32 square feet providing educational information about the facility and the benefits of renewable energy.

3. Utility Connections

- a) The applicant shall place all wiring from the solar installation underground, except in cases where ~~the Planning & Community Development finds that the~~ soil conditions of the site make underground wiring infeasible.
- ~~a)b)~~ All utility poles and connections shall be located in the least invasive location as feasibly possible

4. Environmental Impacts

- a) Proposed structures (including solar PV modules) shall be integrated into the existing terrain and surrounding landscape by minimizing impact to wetlands, steep slopes, and hilltops; protecting visual amenities and scenic views; minimizing tree, vegetation and soil removal; and minimizing grade change.
- b) To the greatest extent feasible, solar PV arrays shall be designed to minimize the number of trees removed, the length of stone walls removed, and the area of wetland vegetation displaced.
- c) No earth material shall be removed from the site. All cuts and fills of earth material shall be balanced.
- d) Clearing of natural vegetation shall be limited to what is necessary for the construction, operation and maintenance of the large ground mounted solar array
- e) For all projects, a minimum area equal to the total project area must remain as natural open space for the life of the project. This land must be on the same lot and continuous in area.

4.5. Historical Impacts

- a) All large scale ground mounted solar projects shall be reviewed by the Historical Commission
- b) The removal of stonewalls, historic foundations or other historic land features shall be avoided. If the project area includes the removal of such features, an alternate plan shall be submitted to the Planning Board and Historical Commission for review. If removal of such

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features is proven to be unavoidable, mitigation shall be required. Mitigation may include replication on site or off site, or may be in the form of monetary contribution, in the amount equal to the value of replication, toward the local Historic Commission.

6. Prime Farmland Impacts

- a) No area with soil identified as Prime Farmland and/or Farmland Soils of Statewide Importance shall be allowed for development of large scale solar arrays. Such farmland as is identified by the USDA Natural Resource Conservation Services.
- e) Prime Farmland may be developed if co-developed as an area for both solar power as well as for agriculture. Such dual-use solar arrays developed on Prime Farmland shall adhere to construction performance standards as outlined in §4.8.3 as applicable.

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5-7. Stormwater

- a) Stormwater generated from the project area shall be prohibited from entering the public way and/or leave the site.
- b) Stormwater must recharge on site
- c) The stormwater management and treatment facility shall be sized to accommodate a 50-year storm event.
- d) Create an environmentally sensitive site design by incorporating Low Impact Development (LID) techniques.

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8. Access

- a) Access roads shall not have a slope greater than 10%. If an access road is to be paved, the slope may be greater if approved by the Fire Chief.
- b) Access roads shall be at least twenty (20) feet wide
- c) All stream crossings, bridges, and access road shall have the load capacity of fifty (50) tons
- d) Plans must be reviewed and approved by the Ware Fire Department prior to commencement of project.

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A-E. Maintenance

1. The operator shall maintain the facility in good condition.
2. Maintenance shall include but not be limited to painting, structural repairs, and integrity of security measures.
3. The operator shall be responsible for maintaining adequate access for emergency vehicles and maintenance equipment.
4. The operator shall be responsible for maintaining safe access, storm water controls, vegetation controls – including the prompt replacement of any dead/diseased screening trees in the buffer, and general procedures and schedules for operating and maintaining the energy facility.
5. If applicable, a battery end-of-life plan shall be included in the Operation & Maintenance plan – detailing procedures for the removal, disposal, and replacement of retired batteries.

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6. The owner of the solar PV array shall file an operation and maintenance report annually with the Planning Board no later than forty-five (45) days after the end of the calendar year, confirming that the operation is ongoing, has not been abandoned, and that the operation and maintenance plan is being followed. Failure to file the report within the required time frame may be considered evidence that the facility has been abandoned.

G.F. Emergency Services

1. The operator shall provide a copy of the operation and maintenance plan, electrical schematic, and site plan to the Fire Chief.
2. The operator shall cooperate with local emergency services in developing an emergency response plan; this plan shall be reviewed annually with local emergency officials and revised as necessary. If applicable, this shall include battery storage hazard mitigation.
3. All means of shutting down the installation shall be clearly marked. Signage on the premises (see §6.5) shall identify a qualified contact person to provide assistance during an emergency; the operator shall change the contact information immediately whenever a change in personnel occurs.
4. If access to the site is gated and locked, the owner shall provide the Fire Department with a means of entering the property (key, combination, or some other means acceptable to the Fire Department).
5. Fire Chief will review and approve all site plans for Large-Scale Solar arrays to be sure slope of access roads, width of access roads, emergency staging area, and any other emergency protocols needed to accommodate emergency vehicles are addresses.

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B.G. Decommissioning

1. Removal Requirements.
 - a)e) Any solar installation that is discontinued or abandoned shall be removed in compliance with the requirements of the Building Inspector.
 - b)f) The owner or operator shall physically remove the installation within 180 days after the date of discontinued operations or receipt of a notice of abandonment from the Town.
2. Notice to Town.
 - i. Town of Ware officials (Town Manager and Planning Board via the PCD Department) shall be notified by certified mail thirty (30) days prior to any change of ownership of the property, lease holder and/or plant operating company within thirty (30) days of such notice, or at a mutually-convenient time, the new party shall arrange to meet with the Planning Board to review the operating conditions of the Special Permit, or as soon as convenient to both parties
 - ii. In the event a large ground-mounted solar energy facility is anticipated to be out of service for a period of at least one year, written notice shall be sent by certified mail to the Planning Board, Building Inspector, and Fire Chief stating the anticipated period of non-operation as well as the reason for the shut-down.

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- iii. In the event of decommissioning, the notice shall provide the anticipated schedule for removal and site restoration along with a site plan indicating the site conditions after the decommissioning is completed, including topography at the same contour interval that was provided in the initial site plan approval, if topographical changes will be made.
- 3. Abandonment.
 - i. Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, the solar facility shall be considered abandoned when it fails to operate for more than one year. Upon determining that the facility has not been in operation for more than one year, the Building Inspector shall send a written notice by certified mail to the property owner and the last known solar energy facility operator, with a copy to the Planning Board, that the Town has found the facility to be abandoned. If the owner or operator fails to remove the installation in accordance with the requirements of this section, the Town may, to the extent it is otherwise duly authorized by law, enter the property and physically remove the facility.
- 4. Decommissioning shall consist of:
 - i. Physical removal from the site of the solar arrays, structures, equipment, security barriers, and electrical transmission lines.
 - ii. Stabilization or re-vegetation of the site as necessary to minimize erosion. The Building Inspector may allow the owner or operator to leave landscaping, below-grade foundations, and/or access roads in place in order to minimize erosion and disruption of vegetation.
- 5. Financial Surety.
 - i. Prior to commencing operation, the applicant shall provide a form of surety, either through a cash deposit or non-cancellable surety bond, in an amount determined to be adequate by the Planning & Community Development Department to cover the cost of removal and site restoration.
 - ii. The applicant shall submit a fully inclusive estimate of the costs associated with removal, prepared by a qualified engineer. The amount shall include an escalator for calculating increased removal costs due to inflation. Salvage for solar panels shall not be included in decommissioning calculations. Salvage may be included for other parts of the installation at the discretion of the Planning Board.
 - iii. The surety shall be maintained by the developer for the lifespan of the facility, with annual certification notices from the surety company or bank for surety bonds submitted to the Planning & Community Development. Such surety is not required for municipal facilities.